

We Claim:

1. A system for securely communicating multimedia information from one or more multimedia content sources to a plurality of end users, comprising:
 - (a) a headend system receiving one or more multimedia information signals from said one or more content sources and user authorization information corresponding to one or more of said plurality of end users, combining said one or more multimedia information signals into a headend composite signal, and generating a secure headend output signal using said user authorization information and said headend composite signal;
 - (b) a signal distribution system, communicatively coupled to said headend system and receiving said secure headend output signal therefrom, said signal distribution system including:
 - (i) one or more signal decoders, each receiving at least a portion of said secure headend output signal, for converting said signal portion into one or more modulated channel signals if authorized by said user authorization information; and
 - (ii) one or more output interfaces, each coupled to one of said signal decoders and receiving one or more modulated channel signals therefrom, for combining said one or more modulated channel signals into a composite user signal; and
 - (c) one or more customer interface devices, each communicatively coupled to one of said output interfaces and receiving a corresponding composite user signal therefrom, and each for dividing, if necessary, and demodulating said composite user signal to one or more end user signals.
2. The system of claim 1, wherein said multimedia information signals are selected from the group consisting of video signals, terrestrial television signals, satellite signals, cable television signals, telephony signals, Internet signals, and data signals.
3. The system of claim 1, wherein said headend system further comprises one or more multimedia signal reception connections selected from the group consisting of a POTS phone line, a DSL line, coaxial cable, fiber optic cable, a satellite dish antenna, and an off the air

antenna, for receiving said one or more multimedia information signals from said one or more content sources.

4. The system of claim 1, wherein said headend system further comprises:

(a) one or more receiver decoders, each receiving one or more multimedia information signals from one of said one or more content sources and converting said multimedia information signals into one or more baseband frequency signals,

(b) a video processor, coupled to each of said receiver decoders, receiving said baseband frequency signals, and modulating said baseband frequency signals to one or more channels; and

(c) a combiner circuit, coupled to said video processor, receiving said one or more modulated channel signals and combining said channel signals into said headend composite signal.

5. The system of claim 4, wherein said headend system further comprises an access control system, coupled to said combiner circuit and receiving said headend composite signal therefrom, for determining whether one or more users are authorized to receive any of said channels included in said headend composite signal.

6. The system of claim 5, wherein said headend system further comprises a data path modulator, coupled to said access control system and receiving said authorized headend composite signal therefrom, for transmitting said headend authorized composite signal and authorization information as said headed output signal.

7. The system of claim 1, wherein said multimedia information includes signals selected from the group consisting of telephony signals, Internet signals, data signals, and terrestrial television signals, and wherein said combiner circuit of said headend system is adapted for combining said channel signals and said telephony signals, Internet signals, data signals, and/or terrestrial television signals into said headend composite signal, said distribution system further comprising:

(a) a service interface, coupled to each of said signal decoders, for receiving said secure headend output signal and dividing said secure headend output signal into a video signal and one or more telephony, Internet, data, and/or terrestrial television signals, and

(b) a communication service module, coupled to said service interface, for receiving and distributing said telephony, Internet, data, and/or terrestrial television signals.

8. The system of claim 7, wherein said signal distribution system further comprises a processor, coupled to said service interface, said signal decoders and said output interfaces, and receiving said authorization information from said headend system through said service interface, for controlling a selection of channels provided to said plurality of customer interface devices in accordance to said authorization information.

9. The system of claim 8, wherein said customer interface devices further comprises at least one customer input device, operatively coupled to said signal distribution system processor, for receiving customer requests and providing such requests to said signal distribution system processor.

10. The system of claim 1, wherein said customer interface devices further comprises:

(a) an interface device for receiving a composite user signal from one of said output interfaces and dividing said signal into video and telephony, Internet, data, and/or terrestrial television signals;

(b) a communications modem, coupled to said interface device and receiving said telephony, Internet, data, and/or terrestrial television signals, for demodulating said telephony, Internet, data, and/or terrestrial television signals into one or more of said end user signals; and

(c) a processor, coupled to said interface device and to said communications modem, for controlling said dividing and demodulating of said composite user signal to said one or more end user signals.

11. A system for securely communicating multimedia information from one or more multimedia content sources to a plurality of end users who share a common loop through communication channel, comprising:

- (a) a multimedia reception system for receiving one or more multimedia information signals from said one or more content sources and user authorization information corresponding to one or more of said plurality of end users, combining said one or more multimedia information signals into a headend composite signal, and generating a secure output signal using said user authorization information and said headend composite signal;
- (b) a signal distribution system, communicatively coupled to multimedia reception system and receiving said secure output signal therefrom, said signal distribution system including:
 - (i) a signal splitter for dividing said secure output signal into a plurality of service signals,
 - (ii) a plurality of signal decoders, each coupled to said signal splitter and receiving at least a portion of one of said plurality of service signals, for converting said signal portion into one or more modulated channel signals corresponding to one predetermined user if authorized in conformance with said user authorization information; and
 - (iii) a combining circuit, coupled to each of said plurality of signal decoders and receiving said modulated channel signals therefrom, for combining said modulated channel signals into a composite multiple user signal;
- (c) a loop through communication channel, coupled to said combiner circuit of said signal distribution system and receiving said composite multiple user signal therefrom; and
- (d) a plurality of customer devices, each coupled to said loop through communication channel and receiving said composite multiple user signal therefrom, and each including a filter permitting transmission of only multimedia information corresponding to a predetermined customer therethrough.

12. The system of claim 11, wherein said headend system further comprises:

(a) one or more receiver decoders, each receiving one or more multimedia information signals from one of said one or more content sources, for converting said multimedia information signals into one or more baseband frequency signals,

(b) a video processor, coupled to one or more of said receiver decoders, receiving said baseband frequency signals and modulating said baseband frequency signals to one or more channels; and

(c) a combiner circuit, coupled to said video processor, receiving said one or more modulated channel signals and combining said channel signals into said headend composite signal.

13. The system of claim 12, wherein said headend system further comprises an access control system, coupled to said combiner circuit and receiving said headend composite signal therefrom, for determining whether one or more users are authorized to receive any of said channels included in said headend composite signal.

14. The system of claim 13, wherein said headend system further comprises a data path modulator, coupled to said access control system and receiving said authorized headend composite signal therefrom, for transmitting said headend authorized composite signal and authorization information as said headed output signal.

15. The system of claim 11, wherein said plurality of signal decoding comprises M signal decoders, said plurality of customer interface devices comprises N customer interface devices, and wherein $M < N$.

16. The system of claim 11, wherein said signal distribution system further comprises a processor, coupled to said splitter, said signal decoders and said output interfaces, and receiving said authorization information from said headend system through said splitter, for controlling a selection of channels provided to said plurality of customer interface devices in accordance with said authorization information.

21. A system for securely communicating multimedia information from one or more multimedia content sources to a plurality of end users, comprising:

- (a) one or more a point of presence systems for receiving one or more multimedia information signals from said one or more content sources and user authorization information corresponding to one or more of said plurality of end users, combining said one or more multimedia information signals into a composite signal, and generating a secure output signal using said user authorization information and said composite signal;
- (b) signal distribution means, communicatively coupled to one of said point of presence systems and receiving a secure output signal therefrom, including:
 - (i) one or more signal decoder means, each receiving at least a portion of said secure output signal, for converting said signal portion into one or more modulated channel signals if authorized by said user authorization information; and
 - (ii) one or more output interface means, each coupled to one of said signal decoder means and receiving one or more modulated channel signals therefrom, for combining said one or more modulated channel signals into a composite user signal; and
- (c) one or more customer interface means, each communicatively coupled to one of said output interface means and receiving a corresponding composite user signal therefrom, and each including means for dividing, if necessary, and demodulating said composite user signal to one or more end user signals.

22. The system of claim 21, wherein said multimedia information signals are selected from the group consisting of video signals, terrestrial television signals, satellite signals, cable television signals, telephony signals, Internet signals, and data signals.

23. The system of claim 21, wherein said point of presence system further comprises means for receiving one or more types of multimedia signals selected from the group consisting of a POTS phone line, a DSL line, coaxial cable, fiber optic cable, a satellite dish antenna, and an off the air antenna.

24. The system of claim 21, wherein said point of presence system further comprises:

(a) one or more receiver decoder means, each receiving one or more multimedia information signals from one of said one or more content sources, for converting said multimedia information signals into one or more baseband frequency signals,

(b) video processor means, coupled to said receiver decoder means, for receiving said baseband frequency signals and modulating said baseband frequency signals to one or more channels; and

(c) combiner means, coupled to said video processor means, for receiving said one or more modulated channel signals, and combining said channel signals into said composite signal.

25. The system of claim 24, wherein said point of presence system further comprises access control means, coupled to said combiner means and receiving said composite signal therefrom, for determining whether one or more users are authorized to receive any of said channels included in said composite signal.

26. The system of claim 25, wherein said point of presence system further comprises data path modulation means, coupled to said access control means and receiving said authorized composite signal therefrom, for transmitting said authorized composite signal and authorization information as said output signal.

27. The system of claim 21, wherein said multimedia information includes signals selected from the group consisting of telephony signals, Internet signals, data signals, and terrestrial television signals, and wherein said coupled point of presence system is adapted for combining said channel signals and said telephony signals, Internet signals, data signals, and/or terrestrial television signals into said composite signal, said signal distribution means further comprising:

(a) interface means, coupled to each of said signal decoder means, for receiving said secure output signal and dividing said output signal into video and telephony, Internet, data, and/or terrestrial television signals, and

(b) communication service means, coupled to said interface means, for receiving and distributing said telephony, Internet, data, and/or terrestrial television signals.

28. The system of claim 27, wherein said signal distribution means further comprises processing means, coupled to said interface means, said signal decoder means and said output interface means, and receiving said authorization information from said point of presence system through said service interface, for controlling a selection of channels provided to said plurality of customer interface means.

29. The system of claim 21, wherein said one or more point of presence systems comprises two or more point of presence systems operatively coupled by one or more wireless communication channels.

30. The system of claim 21, wherein at least one of said one or more point of presence systems is coupled with said signal distribution means by one or more wireless communication channels.

31. A method for securely communicating multimedia information from one or more multimedia content sources to a plurality of end users, comprising the steps of:

(a) receiving one or more multimedia information signals from said one or more content sources and user authorization information corresponding to one or more of said plurality of end users;

(b) combining said one or more multimedia information signals into a headend composite signal;

(c) generating a secure headend output signal using said user authorization information and said headend composite signal;

(d) transmitting said secure headend output signal to one or more signal distribution locations;

(e) converting at least a portion of said secure headend output at said one or more signal distribution locations into one or more modulated channel signals if authorized by said user authorization information;

- (f) combining said one or more modulated channel signals into a composite user signal;
- (g) transmitting said composite user signal to one or more customer locations;
- (h) receiving at least a portion of said composite user signal at said one or more customer locations; and
- (i) dividing, if necessary, and demodulating said received signal to one or more end user signals.

32. The method of claim 31, wherein said multimedia information signals are selected from the group consisting of video signals, terrestrial television signals, satellite signals, cable television signals, telephony signals, Internet signals, and data signals.

33. The method of claim 31, wherein said step (b) further comprises the steps of:

- (a) converting said multimedia information signals into one or more baseband frequency signals,
- (b) modulating said baseband frequency signals to one or more channels; and
- (c) combining said channel signals into said headend composite signal; and

wherein said step (c) further comprises the step of determining whether one or more users are authorized to receive any of said channels included in said headend composite signal.

34. The method of claim 33, wherein step (g) further comprises the step controlling a selection of channels transmitted in accordance to said authorization information.

35. The method of claim 31, further comprising the step of transmitting customer request information from at least one customer location to at least one signal distribution location.

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